DOCUMENT RESUME

ED 460 848 SE 062 681

| | |
|---|---|
| AUTHOR | Jones, Teri Crawford; Taragan, Barbara |
| TITLE | Land of the Eagle. Nature. Teacher's Guide. |
| INSTITUTION | Thirteen WNET, New York, NY.; Public Broadcasting Service, Washington, DC. PBS Elementary/Secondary Service. |
| SPONS AGENCY | American Gas Association, Arlington, VA. Educational Services. |
| PUB DATE | 1993-00-00 |
| NOTE | 17p.; Support also provided by Canon U.S.A., Inc. Videotape not available from ERIC. For other guides in this series, see SE 062 674-80. |
| AVAILABLE FROM | Thirteen-WNET, 356 58th Street, New York, NY 10019. Web site: http://www.pbs.org; Web site: http://www.wnet.org. |
| PUB TYPE | Guides - Classroom - Teacher (052) |
| EDRS PRICE | MF01/PC01 Plus Postage. |
| DESCRIPTORS | Earth Science; *Ecological Factors; *Ecology; Elementary Secondary Education; *Environmental Education; Foreign Countries; Geology; Habitats; North American History; Physical Environment; *Science Activities; Science and Society; Science Education; Scientific Concepts; Social Studies; *Water Resources; Wilderness; *Wildlife; World Views |
| IDENTIFIERS | Everglades; Grasslands; *Natural History; Nature (Television Series); *North America; Prairies |

ABSTRACT

This curriculum guide was developed for use with public television's Nature series. The materials in the guide are designed to help students actively participate in the study and experience of nature. Students are encouraged to view the programs as naturalists would, observing animals in their habitats, noting their behavior, examining the environmental, economic, and political factors that affect their condition, and drawing conclusions. Each lesson in the Teacher's Resource Guide includes: (1) a "Program Overview" that presents background information and brief synopses of the program to be viewed; (2) "Before Viewing the Program" that familiarizes students with the program's subject and allows them to set purposes for viewing; and (3) "After Viewing the Program" that provides discussion questions to help students assess the main points of the program. Some lessons also contain: (i) "Objectives" that provide the teacher with measurement goals; (ii) "Vocabulary" that features definitions of unfamiliar words used in each program; and (iii) a "Naturalist's Guide" (student worksheet) to be duplicated and distributed to students. The programs highlighted in this guide examine the natural history of North America. Program titles include "The Great Encounter," "Conquering the Swamps," "Across the Sea of Grass," "The First and Last Frontier," "Confronting the Wilderness," "Into the Shining Mountains," "Living on the Edge," and "Searching for Paradise." (Contains 41 references.) (WRM)

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# TEACHER'S GUIDE

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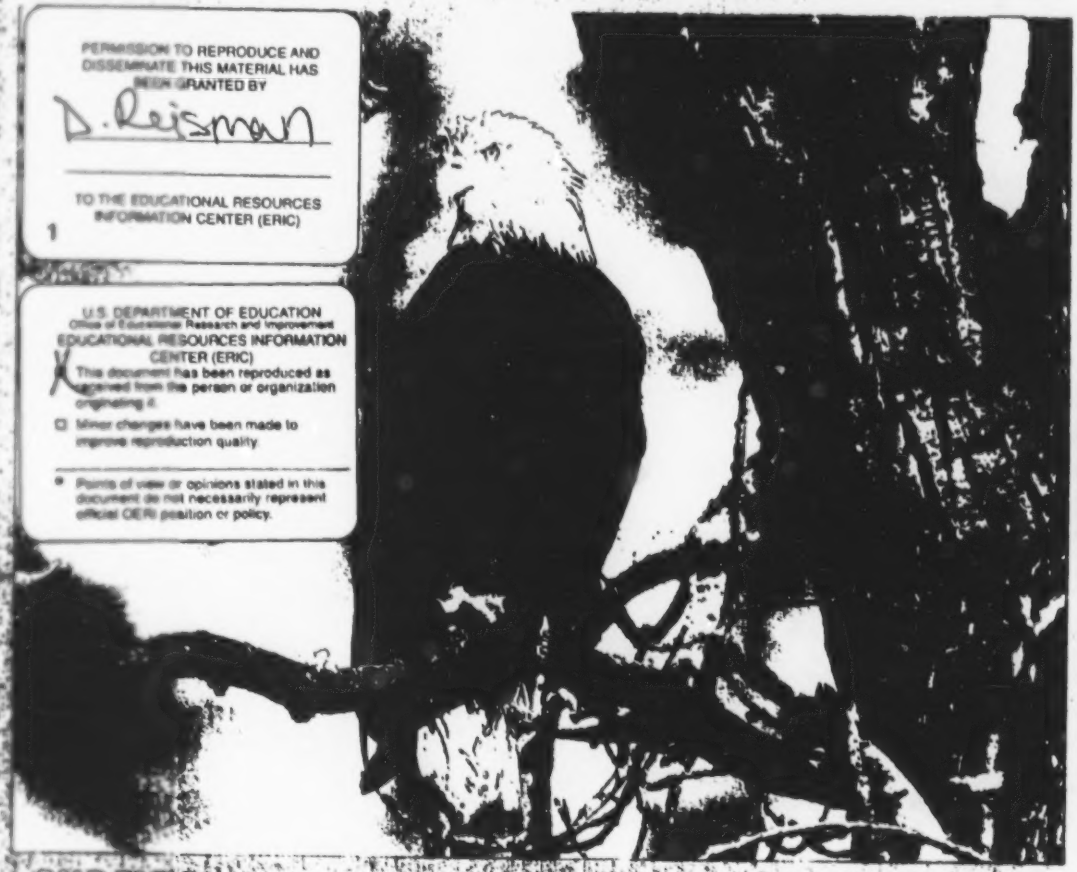

BALD EAGLE

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LAND OF THE EAGLE

# NATURE

Thirteen·WNET
Keeping What Matters in Sight.

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## ENTER THE WORLD OF THE NATURALIST

**ACKNOWLEDGMENTS**

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LAND OF THE EAGLE is a co-production of Thirteen/WNET and BBC-TV.

Funding for LAND OF THE EAGLE, a NATURE mini-series, was provided by Public Television Stations, The American Gas Association (A.G.A.), Siemens Corporation, and Canon U.S.A., Inc.

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The LAND OF THE EAGLE videotape library and this special teacher's guide are made possible by a grant from the Liz Claiborne Foundation.

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## TO THE TEACHER

### INTRODUCTION

This special Teacher's Guide has been developed for use with public television's LAND OF THE EAGLE, an eight-part NATURE series. Hosted by George Page, LAND OF THE EAGLE examines the natural history of North America, setting it against the dramatic story of the early Europeans who explored, settled, and developed the land. It also documents what their arrival meant for the Native Americans who had been sustained by the land for thousands of years. It is a story in which history and the natural world are inextricably linked, a story of unique wildlife and dramatic landscapes, of Native Americans and new Americans, of pioneers and plunderers, of survivors and spoilers.

#### The Educational Materials

These materials are designed for use in social studies, environmental studies, and science classes. They intend to help students enjoy and actively participate in the study and experience of nature. Activities encourage students to view the programs as a naturalist might, observing animals in their habitats, noting their behavior, examining the environmental, economic, and political factors that affect their condition, and drawing conclusions. Because the series integrates natural history, geography, and American history, many of the activities ask students to take the viewpoint of those who first came to the North American continent, observing and evaluating how and why events took place.

This guide contains lesson plans for all eight programs in the series. Full lessons are provided to accompany "The Great Encounter," "Conquering the Swamps," "Across the Sea of Grass," and "The First and Last Frontier." Abbreviated lessons are provided for "Confronting the Wilderness," "Into the Shining Mountains," "Living on the Edge," and "Searching for Paradise," with additional student activites on page 12.

The components of each full lesson are:

- *Program Overview* that provides a brief synopsis of the program to be viewed;
- *Objectives* that provide the teacher with measurable outcomes;
- *Vocabulary* that provides definitions of unfamiliar terms;
- *Before Viewing the Program* that familiarizes students with the program's subject and allows them to set purposes for viewing;
- *After Viewing the Program* that provides discussion questions to help students assess the main points of the program;
- *Naturalist's Guide* (student activity sheet) that may be duplicated and distributed to students. This page provides independent and cooperative learning activities, which encourage students to pursue a more in-depth study of the material presented and to draw conclusions based on the information they have gathered.

  Abbreviated lessons, which appear on pages 10 and 11, include the following: *Program Overview*, *Before Viewing the Program*, and *After Viewing the Program*. Additional activities for each abbreviated lesson appear on page 12.
- In addition, a *Bibliography* containing books of interest to both students and teachers may be found on page 13.
- A colorful *Poster* that highlights the wildlife and landscapes presented in LAND OF THE EAGLE is also included in the package.

#### Creating a Naturalist's Diary

Naturalists and conservationists often keep diaries to record their observations. In order to complete the activities presented in this guide, students will need to keep diaries of their own. They may set aside part of their science notebook, or may choose to make or use a separate booklet for this purpose. Diaries may include news clippings, drawings, photos, maps, charts, graphs, and other notations of observations and research. Students may wish to share their diaries with others or use their work to develop a bulletin board display that reflects what they have learned as naturalists.

## OBJECTIVES

Students will:

- Compare East Coast Native American attitudes toward nature and natural resources with those of early European colonists.
- Examine the kinds of plants and wildlife the colonists found in North America.
- Explore seasonal patterns and the environment along the East Coast and in the Appalachian Mountains.

## VOCABULARY

You may choose to present the vocabulary before or after students have viewed the program.

**bounty** *noun*: plentifulness, generosity; yield, especially of a crop

**crustaceans** *noun*: class of arthropods with chitinous or rigid outer skeletons and jointed bodies and appendages which live mostly in water; includes lobsters, shrimps, and crabs

**decimate** *verb*: destroy much of; kill a large part of

**estuary** *noun*: river mouth into which the tide flows

**exploit** *verb*: make use of, often unfairly or selfishly

**habitats** *noun*: types of areas, such as swamps, deserts, and woodlands, where plants or animals grow or live naturally

**natural resources** *noun*: materials supplied by nature, such as minerals, timber land, water, and plants and wildlife

# LAND OF THE EAGLE: THE GREAT ENCOUNTER

## PROGRAM OVERVIEW

The arrival of Europeans on the shores of the great continent which they called the New World marked the beginning of an enormous change for North America and its native inhabitants. Within a short time period, the rhythms of a natural world would be disrupted, and a way of life that had developed for thousands of years would be changed forever.

The Europeans' first attempts to colonize the East Coast were a failure. By "dominating and taming" the land, they tried to create a new home in the image of the one they had left. However, this land was not like their homeland. They had no knowledge of its climate, wildlife, and seasonal patterns. Consequently, a majority of the first colonists died from starvation and disease, although they were surrounded by a wealth of natural resources.

Through scenes of natural areas and examples of wildlife still to be seen on North America's East Coast and in the Appalachian Mountains, "The Great Encounter," Part 1 of LAND OF THE EAGLE, chronicles what early European colonists encountered and explains how their arrival began to change the continent forever. The narration also contrasts the East Coast Native Americans' attitude toward the land as a provider and an integral part of their world with the conquering attitude of European colonists.

## BEFORE VIEWING THE PROGRAM

Display a map of the eastern United States. Invite students to locate Roanoke Island off the coast of North Carolina, and Jamestown near the opening of Chesapeake Bay on the coast of Virginia. Explain that these two places mark where the English first attempted to colonize North America.

Invite students to imagine they are among the first European colonists to come to North America. On the chalkboard, list ten items colonists might need to survive in the North American wilderness, such as *ax*, *shovel*, *rope*, *sewing needle*, *knife*, *plow*, *cooking pot*, and *fishnet*. Have students choose which they think are the five most important items and explain why. Discuss other important things that colonists might bring with them. Remind students that there were no places for colonists to buy what they needed.

Tell students they are going to watch "The Great Encounter," a program that examines the natural environment of the eastern United States and the Native Americans and European colonists who settled there. Help students set a purpose for viewing by formulating questions that this program might answer. Some purpose-setting questions are: *What natural resources did the colonists find when they first arrived in the New World? How did their views and uses of these resources differ from those of Native Americans? How did the arrival of Europeans affect the wildlife and plants in this area?*

Distribute the Naturalist's Guide to students and preview it with them. Explain that they will be observing seasonal patterns of plants and wildlife of the eastern United States.

## AFTER VIEWING THE PROGRAM

Have students discuss their answers to the purpose-setting questions. Encourage them to discuss the program and share their observations. The following questions may be used to stimulate discussion.

1. How was the New World both a paradise and a hell for the first English colonists? (They marveled at the abundance of resources; yet their ignorance about the land, its wildlife, and weather patterns killed most of them.)
2. What are some examples of seasonal changes along the northeastern coast? How did the eastern Native Americans make use of these changes? (Answers include: Eagles and herons raise families when plant and animal food is abundant in spring. Some migrating birds feed on horseshoe-crab eggs, insects, and small animal life the rest of the year. Birds like the snow geese feed on plant life in the fall. Native Americans lived with these patterns and made seasonal usage of many living things.)
3. When government leaders voted for a national emblem for the United States, the choices were the bald eagle, the wild turkey, and the rattlesnake. Why do you think each animal is or is not appropriate? What animal might you have proposed for consideration?

# LAND OF THE EAGLE: THE GREAT ENCOUNTER

**A naturalist recognizes the interrelationships among plants, animals, and the environment.**

**Complete the first activity and one other activity of your choice.**

## OBSERVING WILDLIFE

Chesapeake Bay supports an abundance of wildlife. In your Naturalist's Diary, sketch some of the variety of birds and sea creatures you observe in this area. Then create a chart like the one below that indicates the food sources that are available for several of the animals.

| SPECIES | FOOD SOURCE |
|---|---|
| Heron | Fish, blue crab |
| Stingray | Clams |
| Bald Eagle | |
| | |

## RESEARCHING FOLKLORE

The bald eagle has been the subject of many myths and legends in the folklore of Native Americans. Research the role of the eagle in the tales of different groups. Then present your findings to the class.

## ROLE-PLAYING A TOWN MEETING

The disappearance of the English colonists from the island of Roanoke remains a mystery. What do you think happened to them? Do research to learn about the colony. Then, with your group, role play the Roanoke colonists conducting a town meeting to discuss the colony's fate. Consider the following in your discussion:

- How are you unprepared to live in the New World?
- How might living on an island contribute to the colony's troubles?
- How do you plan to feed yourselves during the coming winter?
- What relationship do you have with Native American groups living nearby?
- Sir Walter Raleigh and Governor John White have not returned from England with supplies and additional colonists. What will you do if they never return?

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**Bald Eagle**

## DEBATE: "PEOPLE VERSUS THE LAND"

With your classmates, use what you learned from the program and the notes in your Naturalist's Diary to organize a debate on these statements:

- *Land is a sacred gift which nurtures people.*
- *People are superior to nature.*
- *Our duty is to tame the land, to dominate nature.*

## RESEARCHING BIRD HABITATS

Several species of birds migrate along the East Coast flyway, or route, that takes them between summer and winter nesting places. How does the mating of horseshoe crabs contribute to the food source of these migrating birds? Urban development along the East Coast has greatly diminished habitats available to these birds. With a partner, research the areas that have been affected and report on how such development might affect migrating birds.

## OBJECTIVES

Students will:

- Describe the characteristics of the Everglades.
- Describe the interrelationships of species living in the Everglades.
- Describe how different groups of people interacted with the Everglades environment.
- Classify Everglades wildlife.

## VOCABULARY

You may choose to present the vocabulary before or after students have viewed the program.

**amphibian** *noun*: a cold-blooded backboned animal with a smooth glandular skin; most species lay eggs surrounded by jelly that hatch into larvae

**aquifer** *noun*: a layer of underground porous rock, sand, or gravel in which water collects

**hammock** *noun*: a fertile wooded island surrounded by shallow grassy water

**marsh** *noun*: open treeless wetland characterized by the growth of cattails and grasses

**swamp** *noun*: wet spongy wooded land partially or permanently covered with shallow water

**wetland** *noun*: a low-lying area saturated with water

# LAND OF THE EAGLE: CONQUERING THE SWAMPS

## PROGRAM OVERVIEW

The history of Florida's Everglades has been dominated by two attitudes. First, that it is a bountiful, natural resource to be respected; second, that it is a mosquito-ridden, mucky, alligator-infested area that should be conquered. It is the second attitude that has brought the Everglades dangerously close to destruction.

The Calusa, Timucua, and Seminole nations had a rich existence in the Everglades. In contrast, the Spanish conquistadors and the U.S. soldiers who later fought in the Seminole Wars saw the Everglades as a wet wasteland. Although the Native Americans were decimated by war and European diseases, it wasn't until the twentieth century that the destruction of the Everglades itself began. Starting in the early 1900s, large areas were dredged to make way for farms, ranches, and towns. Canals and water pumping stations were built to alter and control the flow of the waterways causing the destruction of the natural rhythm of water levels. To compound the problem, the waters were polluted by fertilizers and manure from farms.

Today, scientists, naturalists, and engineers are developing plans to remedy this earlier damage. Whether their effect will be enough to save the Everglades is still uncertain. "Conquering the Swamps," Part 3 of the LAND OF THE EAGLE, presents the saga of the Everglades from Pre-Colombian times to the present day.

## BEFORE VIEWING THE PROGRAM

Write the following on the chalkboard: *swamp, river of grass*. Discuss with students the images and feelings these words create. Explain that centuries ago, Native Americans living in the Everglades referred to it as *Pahayokee*, or "river of grass." Spanish conquistadors and later settlers did not hold the same regard for the area. Have a volunteer locate the Everglades on a map of Florida. Have students share what they know about the area. Explain that the film they will see, "Conquering the Swamps," examines the Everglades from the point of view of the Native Americans who were once its sole inhabitants, the Spanish conquistadors, and, later, European and American settlers who thought its lands could be put to better use. Help students set a purpose for viewing by formulating questions that this program might answer. Some purpose-setting questions are: *What are the characteristics of the Everglades? What species of plants and animals live in the Everglades? How did the Native Americans' view of the Everglades differ from that of the Spanish conquistadors and later settlers?*

Distribute the Naturalist's Guide to students and preview it with them. Encourage them to record their observations both during and after LAND OF THE EAGLE: "Conquering the Swamps."

## AFTER VIEWING THE PROGRAM

Have students discuss their answers to the purpose-setting questions. Encourage them to discuss the program and share their observations. The following questions may be used to stimulate discussion.

1. What are some of the different Everglades habitats presented in the film and what are the characteristics of each? (Habitats: sawgrass prairie, hammock, mangrove swamp, pine forest, Florida Bay. Characteristics: Answers will vary.)
2. What species of wildlife inhabit the Everglades and what are their characteristics? (Answers will vary.)
3. How did fashion trends at the end of the 19th century decimate Everglades wildlife? What group saved the birds from extinction? (Crocodile and alligator skins became bags and shoes. Egret and heron feathers adorned hats. The Audubon Society.)
4. How has the damage done to the Everglades affected Southern Florida? (Drainage and the demand for water have drained underground aquifers, causing fresh water to be replaced with seawater. Waters are polluted by fertilizers from agricultural run-offs.)

# LAND OF THE EAGLE: CONQUERING THE SWAMPS

**A conservationist supports programs aimed at managing lands for both humans and wildlife.**

**Complete the first activity and one other activity of your choice.**

## OBSERVING AND CLASSIFYING WILDLIFE

Observe Everglades wildlife. Record the name of one species for each of the following categories: insects, crustaceans, mollusks, bony fish, amphibians, reptiles, birds, mammals. Then work with a group to create a classification chart in which you list and describe the species you have identified under each category. Write a description of each group. Add your own illustrations. Display your chart in the classroom.

| AMPHIBIANS | BIRDS | CRUSTACEANS |
|---|---|---|
| FROG - | HERON - | |
| • cold-blooded | • lays eggs | |
| • smooth skin | | |
| • lays eggs that | | |
| hatch as | | |
| larvae | | |
| | | |
| INSECTS | MOLLUSKS | SPIDERS/SCORPIONS |
| | | |
| | | |

## PEOPLE AND THE EVERGLADES

With a group, research and report on how the following groups of people have used and affected the Everglades: Calusa, Timucua, Seminole, Spanish conquistadors, U.S. Army Corps of Engineers, farmers, ranchers, developers, naturalists, environmentalists. Report your findings to the class.

## WRITING FOR INFORMATION

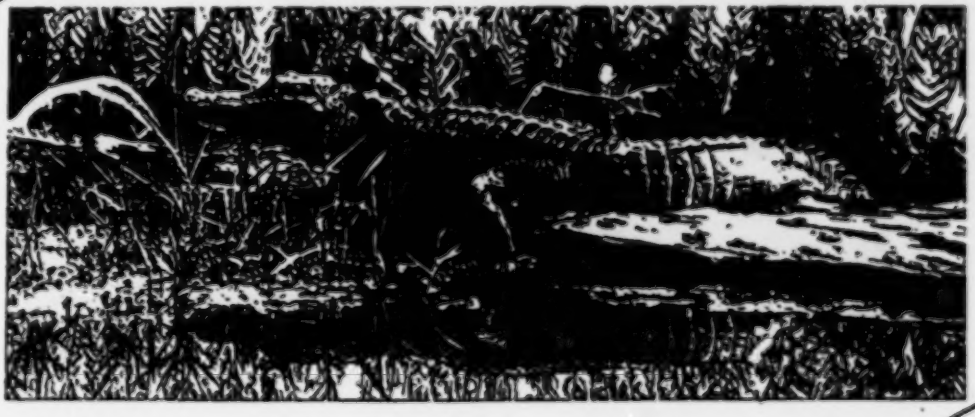
Would you like to find out more about the struggle to save the Everglades? With a partner, write a letter. Include any questions you may have about what people can do to save the Everglades.

**Save the Everglades**
**Everglades National Park**
**P.O. Box 279**
**Homestead, FL 33030**

## HOW WETLANDS WORK

With a group, do research to learn about wetlands and to identify the features and benefits of a wetlands. Points to include are: Wetlands act as sponges to absorb and store rainfall and slowly let it out. They also act as buffers to floods and storms, and as nurseries for many species, forming a vital link in their life cycles. Prepare a report for your class.

**Alligator, Okefenokee Swamp, Georgia**



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## OBJECTIVES

Students will:

- Describe the characteristics of the North American prairie, also known as the Great Plains.
- Describe the interrelationships of species living on the North American prairie.
- Describe how different groups of people used and altered the North American prairie.

## VOCABULARY

You may choose to present the vocabulary before or after students have viewed the program.

**aerate** *verb*: to supply with air

**colony** *noun*: a group of animals or plants of the same species living or growing together

**grizzled** *adjective*: streaked with grey

**lek** *noun*: a place where male birds of some prairie species gather to carry out fighting and courtship behavior

**migrate** *verb*: to move from one region to another for feeding or breeding when the season changes

**prairie** *noun*: a large area of treeless, level or rolling land that in its natural uncultivated state usually has deep fertile soil, and a cover of tall coarse grasses

# LAND OF THE EAGLE: ACROSS THE SEA OF GRASS

## PROGRAM OVERVIEW

The grasslands of North America once stretched six hundred miles across the continent's interior. Low rainfall, great temperature fluctuations, periodic droughts, and natural and man-made fires restricted tree growth but allowed the grasses to proliferate, their tangled root systems storing water underground away from the drying winds. Grazing animals were nurtured by the seemingly endless prairie grasses.

For the many Native American tribes that lived on the prairie there were two major ways of life. Some tribes settled along rivers to farm, while others roamed the open plains as nomads. Their practical knowledge of animals and plants formed part of the rich spiritual life which bound human society to the natural order.

This land was unknown to the Europeans who had settled on the East Coast. Some of the first accounts came from French traders and explorers who told of a rich land that lay a thousand miles to the west. These stories brought settlers to the grasslands. They came to farm, to ranch, and to rid the prairie of anything that interfered with their vision of a tamed land.

"Across the Sea of Grass," Part 4 of LAND OF THE EAGLE, follows the path of Lewis and Clark, who, on a discovery mission for Thomas Jefferson, found a vast waving sea of tallgrass prairie, home to many Native American nations, as well as to bison, pronghorn, elk, coyote, and grizzly bear.

## BEFORE VIEWING THE PROGRAM

Call on a volunteer to trace the route of the Missouri River on a map of the United States. Explain that in 1804, Thomas Jefferson sent two army captains, Meriwether Lewis and William Clark, on a mission to explore the land through which the Missouri River flowed. Ask students to speculate what Lewis and Clark might have discovered on their journey. Then tell students that the film they will be viewing, "Across the Sea of Grass," will follow the path of Lewis and Clark. Add that they will be learning about the Great Plains (also called the North American prairie), the various forms of wildlife that inhabited it, and the different peoples who settled it and altered it. Then help students set a purpose for viewing by formulating questions that this program might answer. Some purpose-setting questions are: *What are the characteristics of the Great Plains? How did Native Americans utilize its natural resources? What plants and animals once flourished on the prairie?*

Distribute the Naturalist's Guide to students and preview it with them. Point out that, as naturalists, they should record their observations both during and after watching LAND OF THE EAGLE: "Across the Sea of Grass."

## AFTER VIEWING THE PROGRAM

Have students discuss their answers to the purpose-setting questions. Encourage them to discuss the program and share their observations. The following questions may be used to stimulate discussion.

1. What role did natural and man-made fires play in helping to shape the prairie? (Fires helped keep the prairie treeless and enriched the soil. Burning grasses were turned into fertilizing ash. Water and sun could reach the soil where new grass was waiting to sprout.)
2. What role did the buffalo play in the lives of some Native Americans? (Native Americans of the prairie ate buffalo meat and used hides for clothes, moccasins and tipis. The buffalo was an important part of religious ceremonies.)
3. What effect did early settlers and, later, farmers have on the prairie? (They plowed up grasses that anchored the topsoil, thus helping to create the "Dust Bowl" of the 1930s. They eventually turned the prairie into the world's breadbasket.)
4. During the building of the railroad linking east and west, the way of life of the Native American nations living on the Great Plains was changed forever. How did this happen? (The U.S. government hoped to destroy their way of life by giving away their land to the railroad companies and also permitting the destruction of the buffalo, on which they depended.)

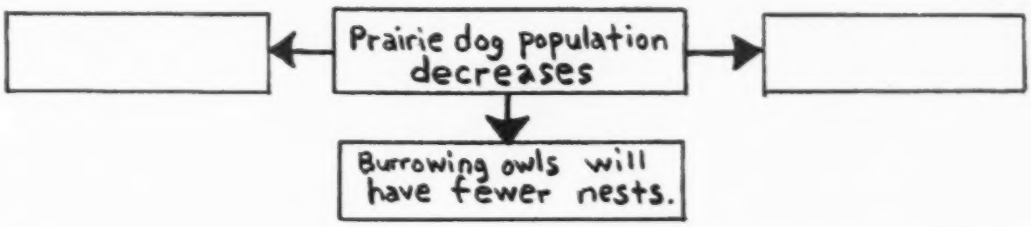
# LAND OF THE EAGLE: ACROSS THE SEA OF GRASS

**A naturalist observes the effects that human population growth and diminished natural habitats have on wildlife.**

**Complete the first activity and one other activity of your choice.**

## CHAIN REACTION

Once, up to 400 million prairie dogs inhabited each of several different areas. Today, 98% of them are gone. Create a chart like the one below showing what effect the near disappearance of the prairie dog has had on other species, including the burrowing owl, the hawk, and the swift fox.




## CREATE A MURAL

With a group, brainstorm the various forms of wildlife that once lived on the prairie. Create a mural showing how the prairie may have looked in 1804. You may wish to extend the mural to show how the prairie looks today. Display the mural in a corridor of your school, in the school library, or in your classroom.

## POETRY

As you can tell from the film, the Native Americans of the Plains created beautiful chants and poetry. Look for books of Native American poetry in your school library. Choose some poems that you would like to recite. With a group, present a poetry reading for your class.

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**Bison Bulls Grazing in Tallgrass Prairie**

## THE PLAINS PEOPLE

Work with a group to research one of the Native American tribes living on the North American prairie during the 1820s. Among those you may choose from are the Sioux, Mandan, Osage, Comanche, Blackfoot, and Pawnee. Discover what materials they used to make their clothing, shelter, tools, weapons, and cooking implements. Make a model of a typical village to illustrate what you have learned.



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## OBJECTIVES

Students will:

- Observe the variety of Alaskan marine and land wildlife.
- Analyze the effects of European and American exploitation of Alaskan wildlife.
- Examine the historical effects of contact with Europeans on different Native American groups in Alaska.
- Examine current environmental threats to Alaska's wildlife.

## VOCABULARY

You may choose to present the vocabulary before or after students have viewed the program.

**aurora borealis** *noun*: luminous and often colored streamers or arches of light in the northern night sky that occurs when electrically charged gas particles released by the sun hit Earth's atmosphere

**deltas** *noun*: clay, silt, sand, or gravel deposits at the mouth of a river

**glaciers** *noun*: masses of ice formed by deep accumulated snowfall that move slowly down a slope or spread outward on a surface

**plankton** *noun*: small, drifting marine and freshwater plants and animals, including algae, diatoms, protozoans, mollusks, and crustaceans

**sanctuary** *noun*: a place of refuge and protection for wildlife

**tundra** *noun*:flat or undulating treeless plain of arctic and subarctic regions, characterized by dwarfed plant life and often having permanently frozen subsoil

# LAND OF THE EAGLE: THE FIRST AND LAST FRONTIER

## PROGRAM OVERVIEW

Separated from Asia by a distance of only about 58 miles, northern Alaska became the gateway to North America for the ancestors of today's Native Americans. About ten thousand years ago they are thought to have crossed into Alaska from Siberia by means of a land bridge. Thousands of years later the region's abundant wildlife lured Russian fur hunters, who were among the first to exploit Alaska's wildlife. Since then, Alaska has suffered many disastrous encounters with European and American profit-seekers. Today Alaska represents almost the last opportunity for preserving America's wilderness before it is consumed by those who hunger for its riches.

Using striking examples of Alaska's marine and land wildlife, LAND OF THE EAGLE: "The First and Last Frontier" demonstrates why Alaska is now our last frontier. It chronicles how various Native American peoples lived with and showed respect for the wildlife they depended on for their very survival, whereas the Russians and later the Americans saw this area primarily as a land to be exploited for its wildlife, gold, and eventually its oil. The program ends by looking at the devastating impact of the Exxon oil spill and the current controversy concerning the Arctic National Wildlife Refuge, a protected wilderness threatened by oil exploration.

## BEFORE VIEWING THE PROGRAM

Display a map of Alaska and the Bering Sea. Ask students to locate the Aleutian and Pribilof Islands, Kodiak Island, Sitka, and Prince William Sound. Invite students to share what comes to mind when they think of Alaska. Explain that many people visit Alaska to view the spectacular scenery and wildlife. Discuss why wildlife and wilderness are valuable. (Responses will vary.) Point out that as beautiful and wild as Alaskan scenes may appear, this area has been affected and altered by people for centuries.

Tell students that the film they will see, "The First and Last Frontier," shows different ways in which people have used Alaska, which was once thought to have unlimited natural resources. Point out that they will also see how modern technology threatens this land with rapidly accelerating devastation. Help students set a purpose for viewing by formulating questions that this program might answer, such as: *Why did Europeans come to Alaska? How did Aleuts, Inuits, and Tlingits relate to the land and wildlife? In what ways is the Alaskan environment rich? How is it in danger?*

Distribute the Naturalist's Guide and preview it with students. Explain that they will be observing a variety of Alaskan wildlife.

## AFTER VIEWING THE PROGRAM

Have students discuss their answers to the purpose-setting questions and share their observations of the program. The following questions may be used to stimulate discussion.

1. In what ways is the arctic Alaskan environment harsh? (The climate is cold; each year, ice covers lakes and shores for seven months; the summer is short; the winter is dark and long.)
2. How are Alaskan animals well adapted to the cold winter temperatures? (They have thick, warm fur or layers of blubber that insulate them from the cold.)
3. The Inuits believed that a hunter who has no respect for his prey, who takes too many animals, will one day find that the animals have vanished. How was this proved true in Alaska? (Russians and Americans hunted the sea otter and fur seal to near extinction. Russians wiped out the sea cow, while Americans did almost the same to bowhead whales and walrus.)
4. How were the Aleuts' encounters with the Russians similar to and different from the Tlingits' encounters with the Russians? (The Russians enslaved the Aleuts and forced them to help slaughter the sea otters and fur seals. The Tlingits were better organized and resisted the Russians. They eventually became traders and managed to keep their culture and independence.)
5. What current threat endangers Alaska's wildlife? (Oil development threatens to pollute the environment and destroy wildlife habitats.)

# LAND OF THE EAGLE: THE FIRST AND LAST FRONTIER

**A conservationist proposes ways to protect and save animals and their environments.**

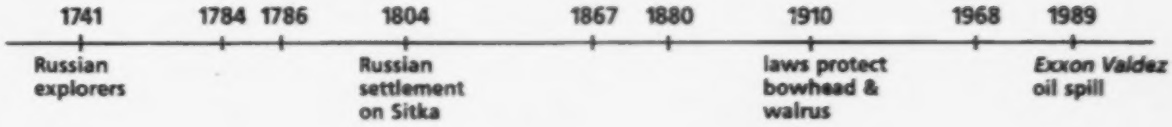
**Complete the first activity and one other activity of your choice.**

## OBSERVING WILDLIFE

Observe the patterns of the salmon as they journey up Alaska's rivers from the sea. Record your observations in your Naturalist's Diary. Then describe the people and wildlife that have depended on this migration.

## RECORDING EVENTS ON A TIMELINE

Create a timeline showing the events that have affected Alaska's wildlife. Here is a format you might use.




## CREATING A MEMORIAL

Many thousands of birds, seals, otters and other animals died as a result of the *Exxon Valdez* oil spill. Create a design for a monument to help people remember this tragic event.

Photo: Kenneth Chambers

**Kodiak Bear and Salmon, Alaska**

## EXPLORING TOTEMS

The animals that the Tlingit chose to depict on their totem poles had great spiritual meaning for the people. With a partner or group, research the characteristics of the bear, killer whale, eagle, and salmon that have made them such powerful symbols, and what specifically these animals symbolize for different Native American groups. Discuss what they might symbolize to you. Then sketch one of the animals you feel is most meaningful. You may wish to try drawing the animal in the style of a Tlingit totem. Explain your choice.

## DEBATING CONSERVATION ISSUES

Many different groups of people are interested in Alaska. Some want to preserve the area for wildlife and tourism. Others want to develop the oil fields or cut down the forests. With your class, hold a town meeting to discuss what should be done with the Arctic National Wildlife Refuge. Work with a group to role-play tourists, conservationists, oil developers, Inuits, Tlingits, Aleuts, and Alaskan residents who may be looking for jobs. Research your position before you begin.

# LAND OF THE EAGLE: CONFRONTING THE WILDERNESS

## PROGRAM OVERVIEW

The Europeans who came to the northern part of North America during the 16th and 17th centuries found a land that seemed so hostile and bewildering they called it a wilderness. Although Breton fishermen were first drawn to the abundant fishing grounds of the North Atlantic coast they soon found that the land itself was rich in fur-bearing animals. As they pushed inland they met Native Americans with whom they traded axes, metal pots, and other tools for beaver pelts. Their simple bartering was the start of a vast fur trading operation that was to effect the politics and economies of North America and Europe for the next two centuries.

"Confronting the Wilderness," Part Two of LAND OF THE EAGLE, follows the course of French explorers Jacques Cartier and Samuel de Champlain, who came to North America looking for a route to the Orient. It looks at the development of the fur trade and its effect on Native American tribes, the founding of the town of Hudson Bay by the British, and the conflict between the French and the British which would lead to war in 1756. Along the way, the program uncovers the wealth of wildlife and plant life that the early traders and explorers encountered. Those included: the industrious beaver, the wolf, the blackfly, the useful birch tree, and the pitcher plant, among others.

## BEFORE VIEWING THE PROGRAM

Write *wilderness* on the board. Ask students what words and images come to mind when they think of wilderness. Explain that the Europeans who first came to northern North America found a land they considered hostile and frightening. Tell them the program, "Confronting the Wilderness," examines how these traders and explorers adapted to this new land as they set up a fur trade with the Huron, Ottawa, and Cree people.

## AFTER VIEWING THE PROGRAM

Encourage students to discuss the program and share their observations and points of view.

1. Why did Europeans first come to the shores of Newfoundland and Nova Scotia?
2. How did European and Native American views of the wilderness differ? What is your view of the wilderness?
3. What factors led to the destruction of the Huron nation? How did this downfall effect the French fur-trading industry?
4. How do beavers contribute to the fertility of ponds and lakes?
5. How did French traders adjust to life in the wilderness?

Activities for this program may be found on page 12.

# LAND OF THE EAGLE: INTO THE SHINING MOUNTAINS

## PROGRAM OVERVIEW

Stretching 3,000 miles from New Mexico to Northern Alaska, the Rocky Mountains are truly North America's great divide. The first European explorers to come upon these mountains viewed them as great, hostile barriers. But to the Native American tribes who lived and hunted in the lush forests, gentle meadows, and alpine tundra, the mountains were the source of physical sustenance and great spiritual strength that connected them with powerful animal spirits.

Winters in the Rockies are long and harsh, but during the brief spring and summer, they come alive with color and sound. As summer moves up the slopes, bighorn sheep give birth to their young and move to pastures at higher elevations, grizzlies roam the meadows and peaks, and birds, such as the dipper and white-tailed ptarmigan, begin raising their broods.

"Into the Shining Mountains," Part Five of LAND OF THE EAGLE, describes the journey of Lewis and Clark in 1804 as they explored the uncharted territory of the West and the region's diverse plant and animal life. The program documents how the waves of adventurers that followed scarred the face of the land, devastated animal populations, and forever changed the way of life of Native American tribes.

## BEFORE VIEWING THE PROGRAM

Using a map of the United States, help students locate the Rocky Mountains. Have them note the 3,000 mile range and the states they cross. Have students share what they know about the Rockies, including their characteristics and their plants and animals. Tell them the program, "Into the Shining Mountains," tells the story of the Native American tribes that lived and hunted in the Rockies. It also follows the path of early European explorers, mountain men, adventurers, and gold miners, and highlights the region's many plants and animals.

## AFTER VIEWING THE PROGRAM

Encourage students to discuss the program and share their observations and points of view.

1. What are the characteristics of the Rocky Mountains?
2. How do the activities of the animals of the Rockies change as spring approaches?
3. How are animals such as bighorn sheep, marmots, pikas, and Rocky Mountain goats well-adapted to mountain life?
4. How did the arrival of Europeans undermine the Native Americans' ways of subsistence and social organization?

Activities for this program may be found on page 12.

## LAND OF THE EAGLE: LIVING ON THE EDGE

### PROGRAM OVERVIEW

Southwest of the Rocky Mountains lies the Sonoran desert, an arid, harsh land characterized by scorching days, freezing nights, and a virtual lack of water. It can be years between rainfalls, yet the Sonoran desert is home to diverse and numerous plants and animals that are well adapted to the extremes of their environment.

The Native American tribes who once lived in the desert and in the nearby river regions made efficient use of the land's valuable resources. Their way of life contrasted sharply with that of the Spanish missionaries who arrived at the end of the 17th century. The missionaries came to convert the Native Americans and to make the land prosperous for Spain. These new settlers worked to adapt the land to their needs. Through irrigation and plowing, they transformed areas of the desert into farmland, introducing wheat, fruit trees, cattle, and honey bees.

"Living on the Edge," Part Six of LAND OF THE EAGLE, explores the transformations the Sonoran desert has undergone from the growth and decline of Native American civilizations to the coming of the missionaries to the present day. It looks at the fascinating desert plants, such as the saguaro, brittlebush, and ocotillo. It highlights desert animals, such as the rattlesnake, gila monster, sandswimmer, and scorpion.

### BEFORE VIEWING THE PROGRAM

Have students work in small groups to describe the characteristics of a desert, including the climate, rainfall, and variations in day and night temperatures. Have them also list desert plants and animals. Suggest they recount visits to museums or zoos that feature desert life and habitats. Have each group report their findings. Using a map of the United States have students locate the Sonoran desert in the Southwest. Tell them that the program, "Living on the Edge," focuses on the history of this region and on its plants and animals.

### AFTER VIEWING THE PROGRAM

Encourage students to discuss the program and share their observations and points of view.

1. What are the characteristics of the Sonoran desert?
2. How did the Native Americans utilize the desert? The Spanish missionaries? What view did each group have of the desert plants and animals?
3. How are the saguaro, brittlebush, ocotillo, and barbed cholla cactus adapted to the desert environment?
4. How are some animals adapted to desert life?

Activities for this program may be found on page 12.

## LAND OF THE EAGLE: SEARCHING FOR PARADISE

### PROGRAM OVERVIEW

California is a region of remarkably diverse wildlife and habitats —high mountains, arid deserts, rugged coastlines, and dense ancient forests. It was to this land that the Franciscan friars came in 1769 to build a string of missions along the California coast. With the arrival of the missions, forts, and ranches, the lives of the native people and the wildlife began to change. The Spanish had their own ideas about land management, civilization, and religion. They introduced foreign crops and animals to the land, which devastated native vegetation.

"Searching for Paradise," Part Eight of LAND OF THE EAGLE, travels throughout California to examine what this region was like at the time of the first Spanish settlements. The program documents the effects on the natural environment of each new wave of immigrants from the Gold Rush to modern times. Along the way it highlights California's remarkable flora and fauna—the giant redwoods, Douglas fir trees, Pacific salamanders, California condors, spotted owls, acorn woodpeckers, and others. The program ends with a look at conservation efforts today, holding out hope that California's land, forests, and animals will endure for generations to come.

### BEFORE VIEWING THE PROGRAM

Tell students that the final program, "Searching for Paradise," highlights the social and natural history of California. Have them locate California on a map and describe its geographical features. Then ask them to name plants and animals that they associate with California. Explain that the program documents the Native American people who once lived in California and shows the effect each new wave of immigrants had on the land, the plants, and the animals of this region.

### AFTER VIEWING THE PROGRAM

Encourage students to discuss the program and share their observations and points of view.

1. How did the Chumash manage the land?
2. How has the diversion of water away from Lake Mono effected the migrant birds who use the area as a staging post?
3. What could the Spanish have learned from the Native Americans?
4. Why do humans abuse natural resources? How has the work of conservationists Aldo Leopold and John Muir helped the wildlife and habitats of some areas of California?

Activities for this program appear on page 12.

# ADDITIONAL ACTIVITIES

## Confronting the Wilderness

### FRENCH EXPLORATION

The domination of northern North America by the French was made possible by four explorers—Verrazano, Champlain, Cartier, and La Salle. Use library resources to research and write a report on one of these explorers. Join with others who have chosen this activity. Report your findings to your class.

### BEAVER LODGE

Diagrams called cross sections are used to show what the inside of something looks like. With a partner, create a cross section of a beaver lodge. Use what you have seen in the program along with library research to help you. Write a description of how beavers build and use their lodge. Create a bulletin board display of your work.

### THE WOLF PACK

Europeans have long viewed wolves as powerful, evil, and terrifying. Native Americans view the wolf differently. With a partner or a group, research and report on the wolf. Use library resources including any Native American myths about wolves that you may find. Describe how the wolf hunts, communicates, plays, rests, mates, and rears its young. Report your findings to your class.

## Into the Shining Mountains

### ANIMALS OF THE ROCKY MOUNTAINS

As you watch the program, select an animal, such as the grizzly, marmot, pika, dipper, eagle, Rocky Mountain goat, sapsucker, or another of your choice. Observe and record how it moves, protects itself, plays, obtains food, rests, and mates. You may have to do library research or visit a nearby zoo, wildlife refuge, or nature center to see these animals in their natural or recreated habitats. Sketch or photograph the animals and their activities. Present a report to your class.

### ANIMALS IN NATIVE AMERICAN MYTHS

Animals play a major role in Native American myths. The blue jay, eagle, coyote, beaver, mountain lion, and bear were all important in stories that explained tribal beliefs. According to some myths, the coyote is a trickster—sometimes a villain, sometimes a hero. The eagle is always sacred and powerful, a messenger that can soar to and from the spirit world. With a partner or group, research and report on animal myths of the Shoshone, Ute, Paiute, and Crow tribes. Illustrate your report with original drawings. If possible, visit a Native American cultural center, museum or cultural event to learn more about the relationship of those people to nature and the earth.

## Living on the Edge

### ANIMALS OF THE SONORAN DESERT

The gila monster, rattlesnake, sandswimmer, fringe-toed lizard, scorpion, and Harris hawk are some of the animals featured in this program. Choose one to research and report on. In your report describe how it obtains food, moves, protects itself, plays, rests, mates, and rears its young. Use library resources to fill in information that was not in the program.

### ANIMAL LOCOMOTION

If you have ever walked across a hot beach with bare feet you'll understand why desert animals need special adaptations to move across the hot desert sand. Research and report on the ways various desert animals move across the desert sand. Include illustrations or pictures in your report.

### THE BEST OF FRIENDS

In this program we saw that some desert animals have special relationships with desert plants. The animals make use of the plants for food, for living, and/or to rear their young. Alone or with a partner write a myth, compose a song, or create a dance about one animal and the plant it uses. You may choose the wood rat and the saguaro, the jumping cholla and the cactus wren, the creosote bush and the creosote grasshopper or another of your choice. Make a presentation to your class along with others who have chosen this activity.

## Searching for Paradise

### IN THE FOOTSTEPS OF ALDO LEOPOLD

In the 1930s, Aldo Leopold, the great conservationist and author, pointed out that simply protecting the land was not enough. He began to develop ways of recreating ecosystems and habitats which had been destroyed. Find out more about Leopold's work. With a group, brainstorm to find ways to recreate habitats and reintroduce native plants and animals in your area. Set goals and make a plan for achieving your goals. Work with local conservation and environmental groups to implement your plans.

### EXPLORERS OF NORTH AMERICA

In the LAND OF THE EAGLE you heard the names of many explorers and settlers, people whose travel to, and exploration and settling of North America helped shape history over 200 years ago. With a group research the following: Ponce de Leon, Jacques Cartier, Samuel de Champlain, Kit Carson, Juan Rodrigues Cabrillo, Father Junipero Serra, Meriwether Lewis, William Clark, and Sacajawea along with others of your choice. Create a display that tells about their accomplishments and explorations. Use a map of North America to highlight the areas each of them explored.

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